DOCUMENT RESUME

ED 051 278 TM 000 592

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TITLE	Characteristics of Reticent and Disruptive Children As Identified by the Barclay Classroom Climate Inventory.
PUB DATE	Feb 71
NOTE	17p.; Paper presented at the Annual Meeting of the American Educational Research Association, Symposium on "Measuring the Classroom Climate," New York, New York, February 1971
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	Behavior Rating Scales, Classroom Observation Techniques, Communication Skills, Curriculum Development, Elementary Grades, Group Behavior, *Identification, Individual Characteristics, Interpersonal Competence, *Intervention, Peer Relationship, *Problem Children, Psychometrics, *Self Evaluation, Student Evaluation
IDENTIFIERS	*Barclay Classroom Climate Inventory

ABSTRACT

The Barclay Classroom Climate Inventory was employed to identify the psychometric characteristics of reticent and disruptive children. The BCCI utilizes self-competency judgments, peer nominations, vocational interests and teacher adjectival ratings in an effort to measure the various expectations which interact in the elementary classroom. A narrative summary of the characteristics of individuals as seen by themselves, by others, and by the teacher and a report on characteristics of children in the classroom are presented. Chi Square Analysis, Analysis of Variance and Step-wise regressions were obtained for 339 elementary school children. These findings are related to the development of the narrative computerized reporting system of the BCCI and the use of learning team consultants for planning curricular or intervention strategies. (Author/TA)

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ED051278

Characteristics of Reticent and Disruptive Children As Identified by the Barclay Classroom Climate Inventory

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A central problem of teaching and guidance personnel in the schools is to determine who is in need of special help in the learning process. The determination of this problem involves judgments about how children can be identified, what can be done in the way of curriculum interventions and guidance strategies, and how to measure the effectiveness of the procedures and the identification process.

This study reports an effort to determine characteristics of reticent and disruptive children via the use of the Barclay Classroom Climate Inventory. This instrument measures self-competency skills, group nominations, vocational awareness, and teacher judgments and integrates these independent sources of judgment via a computer scoring and analysis system that issues in a written report. The report provides a narrative summary of the characteristics of individuals as seen by themselves, by others and by the teacher, and also provides a narrative report on the characteristics of boys and girls in the classroom.[1]

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[1] The Barclay Classroom Climate Inventory has been administered to approximately 4000 elementary children in grades three through six in 12 different states. Details regarding the reliability, validation, criterion studies etc., are available in a Manual of the Barclay Classroom Climate Inventory, Lexington, Kentucky, 1970.

* Paper prepared for presentation at the annual meeting of AERA Symposium Measuring the Classroom Climate, New York City, February 4, 1971.

In conjunction with an Alameda California County Pace Center Project focusing on the reticent child, the Barclay Classroom Climate Inventory was administered to 351 elementary children in the fourth, fifth, and sixth grades. The instrument was used in an experimental research paradigm as an effort to measure change in children's self-competency skills, group interaction level, and teacher judgments. In addition, behavioral observations were made of these children utilizing a simple participation count of verbal responses to teacher questions in the classroom setting. The occupation of the father of each child was also coded and recorded in the data accumulated. This study will report the results of step-wise regressions obtained on selected dependent variables utilizing the above data. The results of the experimental treatment will not be considered in this report and are available in a report of the project (Barclay,1968).

Method and Instruments

One of the major targets of the Alameda County study was to determine the characteristics of reticent children. Improvement of communication skills was one of the major educational needs of the County. More specifically, conversations with teachers in the Alameda County schools revealed that each teacher had a few students who rarely participated in classroom talk. These students exhibited a constellation of behaviors defined as reticence. Evidence that non-verbal students were numerous and that something needed to be done about the problem was further confirmed by a Speech Reticence Survey conducted in Alameda County in April and May of 1967 .

The reticent child was described at that time as one who, when interacting with a group, exhibited symptoms of tension, interrupted himself, and had quavering or muffled speech. This student almost never volunteered in class, he belonged to few extra-curricular activities, had few friends, and exhibited fear in asking even the simplest question. It was felt that these students did have ideas and wanted to talk more but were frustrated by their hesitance to participate. Nonetheless, discussions with teachers indicated that they were unable to define precisely the characteristics of reticent children.

Though disruptive children were not the target of the project, it was also observed that teachers were uncertain regarding the characteristics of children who acted out in the classroom, caused disruptions in classroom activities and failed to achieve at their expected level.

As a consequence of these observations one of the targets of research in the study was to determine the psychometric and behavioral characteristics of reticent and disruptive children in the classroom and to determine in what ways these children differed from each other and from the classroom group.

The Barclay Classroom Climate Inventory provides measures of self-competency as related to skills children think they possess i.e. playing a musical instrument, running fast, being chosen first in a game, listening to others etc. These skills are grouped into artistic-intellectual, social, enterprising, and realistic-masculine skills. A total score is obtained by summing the separate dimensions. Children are then asked to nominate those peers who can best do these various things. In the group scores there

are also a number of items relating to shy reticent behavior and acting-out and disruptive behavior. A series of vocational alternatives in the form of various occupations are also provided which indicates the awareness of the world of work. Finally, a list of 78 adjectives (later modified to 62) provide the basis for teacher ratings. These adjectives are grouped into personal adjustment - positive and negative-, social adjustment - positive and negative, and effort and motivation - positive and negative. In addition, these adjectives also form temperament scales which have been named after the old four temperaments, i.e. choleric (extroverted-unstable), sanguine (extroverted-stable), melancholic (introverted-unstable), and phlegmatic (introverted-stable) and conform to dimensions identified by Eysenck and Rachman(1965).

In addition to the Barclay Classroom Climate Inventory a number of graduate students were taught how to observe participation behavior in the classroom. Two of these students would observe a classroom simultaneously during a social studies recitation period. Teachers were asked to generate many questions and ask these of students. The frequency of responses of a verbal nature was tallied over a two week period, though only one session of observation was available on each class.

The occupational code of the father was also registered and coded on a nine-point scale :(1) skilled technical, (2) unskilled labor,(3) outdoor physical,(4) professional and scientific,(5) social service, (6) clerical, (7) business control and management,(8) business sales, and (9) unknown or not reporting. The occupational code was to be used as a means of comparing groups of children to determine what relationship might exist between paternal occupation and characteristic psychometric and behavioral observations in children.

There were three major questions under investigation in this study: 1) what is the relationship of each of the 78 adjectives of the teacher rating instrument to the reticent and disruptive child ? 2) How do children judged as reticent or disruptive differ from each other on the Barclay Classroom Climate Inventory ? and finally 3) what combinations of the scales and other measures provide the maximum multiple correlations with criteria of reticent and disruptive behavior ?

The answers to these questions were obtained by a series of studies. The first of these studies was to identify children by some set of criteria which was related to reticence and disruptiveness. Teachers were asked to nominate independently of the Barclay Classroom Climate Inventory those children whom they considered to be most disruptive and most reticent. From this pool of nominations children who obtained group nominations of one standard deviation above the mean on the reticence and disruptive scales of the BCCI were also identified. Therefore the criterion of reticence or disruptiveness included agreement by teachers and students that a given individual was reticent or disruptive. When both criteria had been met there were 27 males judged disruptive and 32 males judged to be reticent. For the females only 11 met the dual criteria of being disruptive and 33 met the criteria of reticence. A chi square analysis was completed on the frequency of each of the adjectives used in the teacher rating of the BCCI with the three categories being: 1) reticence, 2) disruptiveness, and 3) other.

Using the same groups of disruptive and reticent children, but not the entire other group, a one-way analysis of variance was completed on all BCCI scales. Finally step-wise regressions were utilized with the scores obtained by all subjects tested on reticent and disruptive group nominations as the dependent variable and all other variables including the BCCI scales, the participation count, and paternal occupation as

independent variables. The testing took place in March of 1967 and included 351 elementary children in grades four, five, and six. Complete data was obtained on 168 boys and 171 girls. Earlier data analysis on the BCCI did not indicate significant differences relating to grade level or age.

Results

Table 1 presents the results of the chi square analysis on the adjectives of the teacher rating portion of the BCCI. These results indicate that certain adjectives are more characteristic of disruptive children than others. A similar observation is in order for reticent children

--- insert table 1 about here ----

Table 2 then identifies those adjectives most discriminating in favor of disruptive children and reticent children. For example, the disruptive child is rated most typically as restless, distractible, anxious, undependable, etc. The reticent child is seen as introverted, cautious, controlled, silent, passive, and yet cooperative, considerate, kind, methodical and withdrawn. Certain of these adjectives also are applicable to the larger group of children, but they are more often rated for reticent children. Thus one can observe that the reticent child does fit into a class of adjectival ratings characterized by a controlled and cautious approach to classroom interaction, while the disruptive child appears to evince characteristics associated with lack of controls, mood swings, and unstable behavior.

--- insert table 2 about here ---

Table 3 reports selected F ratios obtained on BCCI variables for disruptive and reticent males, and table 4 reports the same findings for disruptive and reticent females. Only those comparisons which were significant are reported with the exception of the total self-competency scale and the total group nominations.

--- insert tables 3 and 4 about here ----

From table 3 it is apparent that male reticent children receive both more positive and negative ratings by teachers on effort and motivation dimensions. They are also viewed as more phlegmatic (stable introverts) and less choleric (unstable extroverts) than disruptive males. Reticent males receive more group nominations in the social and intellectual areas than disruptive boys do. Both groups have raw score means which are at the 48th percentile for males on the self-competency total score. The group nominations means reported are at the 68th and 88th percentile respectively for disruptive and reticent children. The group disruptive nominations shows a very high F ratio because it was one of the criteria utilized in identifying the groups and is reported only for comparison purposes with reticent children.

Table 4 reports the same comparisons for female disruptive and reticent children. Here it is obvious that there are fewer scales which discriminate adequately between disruptive and reticent females. Reticent females tend to receive more ratings relating to positive social adjustment. In the self-competency scales disruptive females have a mean self-competency score at the 38th percentile and reticent females mean score is at the 48th percentile. The difference in percentile ranks for mean group nominations is more dramatic than for males. Disruptive females mean percentile rank is at the 42nd percentile and reticent females at the 84th percentile.

Tables 5 and 6 report the step-wise regressions and multiple correlations obtained for males and females on the dependent variable of group reticent nominations. Tables 7 and 8 report step-wise regressions and multiple correlations obtained for males and females on group disruptive nominations.. These data are based on 168 boys and 171 girls.

----- insert tables 5,6,7,& 8 about here ----

One observes in looking at tables 5 and 6 that the largest variance and the first scale correlating highest with the dependent variable of group reticent nominations is the group nominations in the intellectual dimension. Other factors or scales which increase the multiple correlation for boys are the group disruptive nominations, the occupation of the father, group enterprising or leadership skill nominations and a group of teacher rating dimensions relating to negative adjectives and adjectives related to the melancholic (unstable-introvert) dimension. In addition, one of the vocational scales i.e. conventional is present in the regression steps. From the data it would appear that a combination of intellectual, enterprising, and disruptive nominations, together with certain adjectival scales relating to unstable and introverted behavior relate to the dependent variable and account for about 58 % of the total variance. In another study not reported here(Barclay,1970) it was observed that boys whose fathers were in skilled technical or outdoor occupations tended to be most reticent.

The female step-wise regressions include many of the same dimensions observed in the male data with group intellectual, social and realistic nominations as well as disruptive nominations providing a major source of variance. In addition self-enterprising and artistic skills, titles relating to status occupations and finally the participation behavioral count relating to the multiple correlation.

In the step-wise regressions for disruptive nominations adjectival ratings which are associated with unstable extroverted behavior and group nominations in the enterprising, social and intellectual areas account for a considerable portion of the variance for both males and females. For the males interest in vocational titles relating to masculine outdoor interests(realistic) and bold high-risk occupations (control) also enter into the equation. It is also apparent that these boys showed more active participation in the behavioral count in the classroom. The female analysis would suggest that positive effort and motivation is a teacher rating dimension which correlates with disruptive behavior in girls. Though this finding seems contradictory, studies of mean ratings on the various dimensions indicate that girls often are viewed by teachers as more social, and less motivated in terms of the adjectives checked. This also fits well with the self and group enterprising scales which are associated with leadership tendencies and striving behavior related to the attempt to gain recognition.

Summary

The identification of group characteristics of reticent and disruptive children in this study provides research support for the gist of a number of empirical observations obtained by individual consultation with teachers and counselors utilizing the BCCI as a diagnostic tool for the planning of classroom strategies of intervention and individualized programming. The BCCI is primarily designed for the planning of instructional and counseling strategies to cope with the learning difficulties of individuals. Parents who have viewed the individual reports of their children and who participated in a parental validation study of the instrument(Barclay & Bramble 1970) significantly identified narrative statements regarding reticent and

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disruptive behavior in their children.[2] In addition, the utilization of individualized reports with 42 teachers in the Corpus Christi Public Schools has confirmed the teacher support of the characteristics cited in the individual reports. Utilizing the known leadership-enterprising thrust of the disruptive child, his possible creative interests in intellectual and artistic dimensions, one can plan appropriate individualized strategies of intervention which maximize his interests on the condition of reasonable conformity to teacher and peer expectations. In the same manner, the reticent child can be socially reinforced for his efforts at communication utilizing his known interests. Though not central to the purpose of this paper, the BCCI is utilized as a psychometric method of assessing the multiple inputs which create and sustain the expectations and behavior of children in the elementary classroom. These inputs, translated into a narrative statement, provide in non-psychological language an integrated psychometrically based procedure for learning team consultation. Counselors, teachers, principals and learning consultants can then sit down and verify through experience the child's characteristics determining what next steps may be in order for planning effective and meaningful interventions based on the child's assets and natural interests.

This study which preceded the development of the consultation procedures and the construction of the narrative reporting statements provided a portion of the rationale for both the narrative reporting system of the BCCI and the planning of alternate strategies related to psychometric and behavioral characteristics.

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2 This study involved the preparation of two forms specified by the computer and individually taylored to each child's narrative statements. One form contained a calculated response from the child's testing, and the other had a randomly chosen statement drawn from the pool of available responses. Calculated and random statements were alternately distributed throughout the two forms and parents judged the efficacy of each statement on a five-point scale.

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TABLE 1

SUMMARY OF CHI SQUARE ANALYSES OF TEACHER RATING ADJECTIVES**

	Adjective	% of Disruptive Nominated	% of Reticent Nominated	% of Other Nominated	Chi Square	P≤*
1.	Active	68.4	46.8	62.8	6.48	.05
2.	Uninterested	28.9	16.1	5.7	23.04	.01
3.	Secure	10.5	32.3	35.2	9.29	.01
4.	Stable	10.5	30.6	33.3	8.14	.02
5.	Open	36.8	22.6	33.3	3.15	
6.	Uncooperative	26.3	3.2	1.9	44.37	.01
7.	Passive	15.8	33.9	16.9	9.58	.01
8.	Withdrawn	13.2	29.0	9.2	17.40	.01
9.	Cooperative	28.9	64.5	58.6	13.83	.01
10.	Docile	13.2	21.0	14.6	1.74	
11.	Immature	44.7	24.2	24.1	7.43	.05
12.	Unfriendly	7.9	.0	1.1	10.49	.01
13.	Distrustful	31.6	4.8	5.4	31.88	.01
14.	Depressed	13.2	8.1	3.1	8.62	.02
15.	Confident	23.7	30.6	31.8	1.02	
16.	Insecure	52.6	33.9	29.5	8.11	.02
18.	Moody	28.9	8.1	9.6	13.16	.01
19.	Mature	13.2	25.8	24.9	2.64	
20.	Friendly	44.7	71.0	71.6	11.35	.01
21.	Trustful	26.3	48.4	39.5	4.80	
22.	Enthusiastic	31.6	30.6	40.2	2.63	
23.	Cheerful	50.0	48.4	58.2	2.52	
24.	Cautious	18.4	46.8	27.2	11.76	.01
25.	Anxious	55.3	27.4	33.7	8.62	.02
26.	Aggressive	50.0	6.5	17.6	30.25	.01
27.	Considerate	23.7	61.3	54.4	14.94	.01
28.	Unresponsive	18.4	6.5	3.4	14.32	.01
29.	Affectionate	23.7	37.1	36.8	2.57	
30.	Introverted	10.5	46.8	17.6	28.10	.01
31.	Extroverted	42.1	12.9	29.1	10.97	.01
32.	Cooperative	28.9	67.7	61.3	16.71	.01
33.	Kind	18.4	61.3	51.0	18.34	.01
34.	Lack of Humor	7.9	12.9	6.5	2.86	
35.	Friendly	63.2	69.4	69.7	.67	
36.	Unperceptive	23.7	11.3	6.1	13.19	.01
37.	Hostile	15.8	3.2	.8	27.85	.01
38.	Irresponsive	21.1	6.5	2.7	22.60	.01
39.	Humorous	34.2	32.3	35.6	.26	
40.	Cruel	10.5	1.6	2.7	7.03	.05
41.	Perceptive	15.8	24.2	28.7	3.06	
42.	Trusting	28.9	40.3	38.7	1.51	
43.	Responsive	23.7	41.9	43.7	5.48	
44.	Independent	15.8	22.6	29.9	4.12	

* df = 2

** Note: Chi square analyses computed on raw frequency data not percentages. N = 339 elementary children grades four, five, and six.

TABLE 1 (Continued)

	Adjective	% of Disruptive Nominated	% of Reticent Nominated	% of Other Nominated	Chi Square	P≤ *
45.	Concerned	26.3	40.3	34.9	2.03	
46.	Suspicious	31.6	14.5	10.0	13.83	.01
47.	Silent	7.9	38.7	13.8	24.28	.01
48.	Inconsiderate	36.8	3.2	5.0	47.91	.01
49.	Unfriendly	5.3	1.6	1.5	2.46	
50.	Dependent	39.5	40.3	29.1	3.93	
51.	Indifferent	23.7	11.3	8.8	7.63	.05
52.	Outspoken	47.4	19.4	24.1	10.96	.01
53.	Alert	31.6	51.6	56.3	8.20	.02
54.	Irresponsible	44.7	4.8	6.5	55.06	.01
55.	Methodical	5.3	30.6	22.6	8.90	.01
56.	Controlled	7.9	43.5	31.4	14.06	.01
57.	Organized	10.5	38.7	34.5	9.88	.01
58.	Uncoordinated	42.1	16.1	11.1	24.72	.01
59.	Involved	26.3	22.6	28.7	.97	
60.	Unsystematic	50.0	12.9	16.5	25.86	.01
61.	Incomplete	50.0	14.5	15.3	26.99	.01
62.	Unintegrated	34.2	4.8	8.0	27.06	.01
63.	Distractible	63.2	22.6	26.4	23.23	.01
64.	Undependable	52.6	8.1	5.4	77.49	.01
65.	Ambitious	15.8	29.0	30.7	3.57	
66.	Dependable	10.5	46.8	52.5	23.44	.01
67.	Persistent	21.1	35.5	29.9	2.34	
68.	Integrated	5.3	8.1	9.6	.82	
69.	Preoccupied	50.0	29.0	21.5	14.54	.01
70.	Disorganized	44.7	9.7	13.4	26.40	.01
71.	Confused	28.9	21.0	14.9	5.15	
72.	Systematic	10.5	24.2	23.4	3.35	
73.	Coordinated	10.5	33.9	28.7	6.91	.05
74.	Indifferent	36.8	19.4	10.3	19.89	.01
75.	Thorough	10.5	33.9	28.4	6.85	.05
76.	Unambitious	44.7	8.1	9.6	37.83	.01
77.	Restless	63.2	12.9	17.6	43.94	.01
78.	Responsible	10.5	48.4	49.8	20.91	.01

* df = 2

TABLE 2

ADJECTIVES MOST DISCRIMINATING OF DISRUPTIVE AND RETICENT CHILDREN

DISRUPTIVE CHILDREN		RETICENT CHILDREN	
Adjective	% of Nominations	Adjective	% of Nominations
Restless	63	* Cooperative	67
Distractible	63	* Considerate	61
Anxious	55	* Kind	61
Undependable	52	Introverted	46
Insecure	52	Cautious	46
Unsystematic	50	Controlled	43
Incomplete	50	Silent	38
Preoccupied	50	* Organized	38
Aggressive	50	Passive	33
Outspoken	47	* Methodical	30
Disorganized	44	Withdrawn	29
Immature	44		
Irresponsible	44		
Unambitious	44		
Uncoordinated	42		
Indifferent	36		
Unintegrated	34		
Suspicious	31		
Distrustful	31		
Moody	28		
Uncooperative	26		

* Also typical of other children.
N = 38 disruptive children and 65 reticent as identified by teacher and peer criteria

TABLE 3

F RATIOS FOR SELECTED VARIABLES DISRUPTIVE AND RETICENT MALES

Variable	Disruptive Mean	Disruptive S.D.	Reticent Mean	Reticent S.D.	F Ratio	P
Effort & Motivation Pos.	1.29	2.18	3.87	4.24	8.12	.01
Effort & Motivation Neg.	6.88	4.52	10.50	3.25	12.64	.01
Total Negative Adjectives	27.22	10.11	32.09	6.57	4.95	.05
Choleric	7.70	5.62	3.71	3.23	11.54	.01
Phlegmatic	3.33	2.73	6.43	5.00	8.27	.01
Group Social	2.37	2.40	6.84	6.43	11.64	.01
Group Intellectual	4.00	5.13	9.43	14.35	3.48	.05
Group Disruptive	20.63	18.23	3.93	3.95	25.48	.01
Self Total	15.29	3.58	15.31	5.31	.00	
Group Total	19.25	13.83	31.09	33.56	2.93	

N Disruptive = 27; N Reticent = 32. df for 1 & 57, .05 = 4.03, .01 = 7.17.

TABLE 4

F RATIOS FOR SELECTED VARIABLES DISRUPTIVE AND RETICENT FEMALES

Variable	Disruptive Mean	Disruptive S.D.	Reticent Mean	Reticent S.D.	F Ratio	P
Social Adjustment Pos.	2.45	2.54	5.06	3.17	6.08	.05
Self Enterprising	2.18	1.53	3.21	1.19	5.31	.05
Group Disruptive	11.54	6.60	2.24	2.52	46.79	.01
Self Total	13.18	3.34	14.72	2.97	2.09	
Group Total	8.90	7.96	24.97	31.52	2.75	

N Disruptive = 11; N Reticent = 33.
df for 1 & 42, .05 = 4.08, .01 = 7.31.

TABLE 5

STEP-WISE REGRESSION GROUP RETICENT NOMINATIONS MALES

Step No.	Variable	Multiple R	R^2	Increase R^2	F Value to Enter or Remove
1	Group Intellectual	.621	.385	.385	104.60
2	Group Disruptive	.677	.458	.073	70.02
3	Father's Occupation	.701	.491	.033	53.01
4	Group Enterprising	.712	.506	.015	42.09
5	TR Melancholic	.724	.525	.019	35.86
6	TR Eff. & Motivation Neg.	.732	.535	.010	30.98
7	TR Social Adjustment Neg.	.751	.564	.029	29.69
8	Titles Conventional	.755	.570	.006	26.44
9	TR Choleric	.758	.574	.004	23.81
10	TR Total Negative	.762	.580	.006	21.83

NOTE: TR = Teacher Rating

TABLE 6

STEP-WISE REGRESSION GROUP RETICENT NOMINATIONS FEMALES

Step No.	Variable	Multiple R	R^2	Increase R^2	F Value to Enter or Remove
1	Group Intellectual	.572	.327	.327	82.50
2	Group Social	.611	.373	.046	50.10
3	Group Disruptive	.645	.416	.043	39.76
4	TR Social Adjustment Neg.	.663	.439	.023	32.68
5	TR Choleric	.687	.471	.032	29.60
6	Group Realistic	.695	.483	.012	25.53
7	Self Enterprising	.700	.490	.007	22.46
8	Titles Status	.707	.499	.009	20.31
9	Self Artistic	.712	.506	.007	18.39
10	Behavioral Rating	.715	.511	.005	16.79

TABLE 7

STEP-WISE REGRESSIONS GROUP NOMINATIONS DISRUPTIVE MALES

Step No.	Variable	Multiple R	R^2	Increase R^2	F Value to Enter or Remove
1	TR Choleric	.403	.162	.162	32.28
2	Group Enterprising	.502	.252	.090	27.82
3	Group Social	.594	.352	.010	29.85
4	TR Melancholic	.605	.366	.014	23.56
5	Group Reticent	.620	.384	.022	20.29
6	Group Intellectual	.639	.408	.024	18.56
7	Behavioral Rating	.646	.417	.009	16.43
8	TR Eff. & Motivation Neg.	.653	.426	.009	14.84
9	Titles Realistic	.659	.434	.008	13.50
10	Titles Control	.668	.446	.008	12.66

TABLE 8

STEP-WISE REGRESSION GROUP NOMINATIONS DISRUPTIVE FEMALES

Step No.	Variable	Multiple R	R^2	Increase R^2	F Value to Enter or Remove
1	TR Eff. & Motivation Pos.	.300	.090	.090	16.73
2	Self Enterprising	.361	.130	.040	12.63
3	Titles Control	.402	.161	.031	10.76
4	Group Enterprising	.440	.193	.032	9.96
5	Group Social	.470	.220	.027	9.38
6	TR Social Adjustment Neg.	.490	.240	.020	8.66
7	Group Reticent	.499	.249	.009	7.74
8	Group Intellectual	.514	.264	.014	7.27
9	Father's Occupation	.522	.272	.008	6.71
10	Titles Enterprising	.527	.277	.005	6.15

NOTE: TR = Teacher Rating